

## Response of *Capsicum annum* to two VAM species under green house condition

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### SUMMARY

Pot trial experiments were conducted under green house condition to study the response of *Capsicum annum* (Chilli) to the inoculation of two species of *Glomus* fungi. Response of chilli in terms of growth and biochemical components were recorded. Experiments conducted by inoculating the *Glomus fasciculatum*, *G. mossae*, Nitrogen(N) Phosphorus(P) Potassium(K) and un-inoculated control in four replicates. Chilli showed improved performance than un-inoculated one. The growth parameters, number of fruits, weight of the plant, number of branches, size of the plant, number of flowers and biochemical concentration viz. carbohydrates, proteins and reducing sugars was significantly higher in *G. fasciculatum* and *G. mossae* compared to NPK treated, while un-inoculated control showed least performance among the experimental sets. Significant gain in growth parameters and biochemical composition was recorded.

**Key words :** *Glomus*, Pot trial, NPK, Biochemical

VAM fungi form symbiotic association with root system of more than 80% of Angiospermic plants. In Solanaceous vegetable crops *Glomus* species is most dominant AM fungus (Reddy *et al.*, 2006). *Arbuscular mycorrhizae* (AM) association is known to help in the growth of Chilli and other vegetables. Inoculation of VAM fungi improves physiological conditions of crop plants (Alexander *et al.*, 1989). The contribute of Mycorrhizae increases the uptake of major and minor nutrients (Srinivasa, 1993). Influence the better growth and higher yield as compared to non-mycorrhizal one (Powell, 1984). Further chilli is transplanted crop and hence, pre colonizing the transplant in the nurseries can help to exploit AM fungi. Hence, in the present experiment two species of *Glomus* compared to NPK and un-inoculated control evaluated under green house condition, performance of chilli in terms of growth and concentration of biochemicals was analyzed. During *Kharif* crop season all the experiments were conducted in triplicate, under green house condition. The aim of the experiment was to evaluate the efficiency of mycorrhizal fungus *Glomus* over chemical fertilizer NPK to improve the vegetative characteristics and biochemical composition.

### MATERIALS AND METHODS

Present study was conducted at Department of Botany, Bangalore University, P.G. Centre, Kolar in green house with an intention to evaluate the performance of chilli plant inoculated with *Glomus mossae* and *Glomus fasciculatum* compared to chemical fertilizer NPK and un-inoculated control. Pot trial method was used during the *Kharif*/rainy season during 2006. Uniformed sized pots of 15 cm diameter was filled with sterile soil having N=0.094, P=14.4, K=108 proportion of nutrients and 7.4 pH. Cultures of *Glomus mossae* and *Glomus fasciculatum* multiplied and maintained in pots containing sterilized soil and sand (1:1) on which Rhodes grass was grown (Sreenivasa and Bhagyaraj, 1988).

Seedlings of chilli plants were raised on well prepared nursery trays previously supplied with sterilized farmyard manure mixed with nursery soil. Inoculum was placed 2 cm below the soil as a thin layer with inoculum potential of  $0.18 \times 10^4$  g<sup>-1</sup> infective propagules of *Glomus mossae* and  $0.19 \times 10^4$  g<sup>-1</sup> infective propagules of *Glomus fasciculatum* i.e. 10g of inoculum per pot. Twenty days old seedlings from nursery trays were transplanted to each of the sixteen pots. Four pots each inoculated with *Glomus mossae* and *Glomus fasciculatum*, four pots NPK amended and four pots un-inoculated control. Three replicates of sixteen pots were kept.

One set of three treatments and un-inoculated control plants from each replicate were analyzed at 25 days after transplantation and other set subsequently analyzed at the same interval i.e. at 50 days after transplantation. Morphological features like root length, root number, shoot length, shoot branches, stem nodes, leaf number and surface area of leaf, number of flower, fresh and dry

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